

65



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,700	07/14/2003	Toby Smith	P1721US01	3047

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EXAMINER

LE, HUYEN D

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/619,700	SMITH, TOBY	
	Examiner	Art Unit	
	HUYEN D. LE	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

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Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/14/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second piezoelectric material in claims 8 and 17, and the rectangular diaphragm with two separate nodal fulcrums in claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. Claims 8, 17 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not disclose a second piezoelectric material that is electrically activated by the electric circuit as claimed in claims 8 and 17.

The specification does not disclose that the metal diaphragm is rectangular with two separate nodal fulcrums as claimed in claim 21.

3. Claim 5 recites the limitation "the piezoelectric device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the piezoelectric device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2643

5. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byrne (U.S. patent 4,330,729) or Pipitone et al. (U.S. patent 4,063,049) in view of Nakagawa (U.S. patent 4,430,529) or Nakamura (U.S. patent 4,593,160).

Regarding claims 1-3, 5-12, 14-20 and 22 Byrne or Pipitone teaches an acoustic generating device that comprises a piezoelectric material (12, 6, respectively), a metal diaphragm (10, 8, respectively) having a nodal fulcrum as claimed, a housing (20, 22, 32, 42 in Byrne and 1, 2, 3 in Pipitone) an electric circuit (14, 10, respectively) and mounting devices (figures 2 and 5 in Byrne, and the figure in Pipitone).

Byrne or Pipitone teaches the mounting devices (20, 24, 22, 30, col. 4, lines 5-8 and lines 13-17 in Byrne and 2, 5 in Pipitone) that are constructed of insulating material and positioned at the top and bottom of the metal diaphragm.

Byrne or Pipitone does not specifically teach that the mounting devices support the metal diaphragm at the nodal fulcrum with an adhesive as claimed. However, it is very well known in the art to provide an adhesive for fixing or connecting the mounting devices to the diaphragm.

Nakagawa or Nakamura teaches an adhesive for connecting the mounting device to the diaphragm (col. 3, lines 29-31 and col. 4, lines 42-44 in Nakagawa, and col. 2, lines 66-68 in Nakamura).

Since Byrne or Pipitone does teach the mounting devices that support the diaphragm at the node ring; it therefore would have been obvious to one skilled in the art to provide an adhesive or a bonding agent, as taught by Nakagawa or Nakamura, for securely connect the mounting devices (20, 24 and 22, 30, respectively) of Byrne or Pipitone to the diaphragm.

Art Unit: 2643

Regarding claims 4 and 13, Byrne or Pipitone in view of Nakagawa or Nakamura do not specifically teach that the electric circuit is at least partially mounted on a circuit board as claimed. However, providing a circuit board for the electric circuit in a piezoelectric transducer is well known in the art.

Therefore, it would have been obvious to one skilled in the art to provide a circuit board for the electric circuit in the piezoelectric transducer of Byrne or Pipitone for a compact transducer and providing better electrical connections to the device.

Regarding claim 21, Byrne or Pipitone in view of Nakagawa or Nakamura do not specifically teach that the diaphragm is rectangular as claimed.

However, it would have been obvious to one skilled in the art to provide any shape for the diaphragm such as a circular or a rectangular shape for the diaphragm of Byrne or Pipitone depending on the application and the desired frequency characteristics.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (703) 305-4844. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Art Unit: 2643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL
July 23, 2004


HUYEN LE
PRIMARY EXAMINER

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